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IN THE SPECIFICATION

The specification as amended below with replacement paragraphs shows added text with underlining and deleted text with ~~strike-through~~.

Please REPLACE the paragraph beginning at page 1, line 25, with the following paragraph:

The inventors have proposed means for solving the ~~above-described~~ above-described problems. Specifically, they disclosed "APPLICATION PROGRAM STARTING METHOD, RECORDING MEDIUM ON WHICH SAID APPLICATION PROGRAM IS RECORDED, AND COMPUTER SYSTEM" in Japanese Unexamined Patent Publication No HEI 11-24878 A laid open for public inspection on January 29, 1999, which corresponds to U.S. Patent Application Serial No. 08/974,246 filed on November 19, 1997; "ELECTRONIC INFORMATION DISPLAYING METHOD, ELECTRONIC INFORMATION BROWSING APPARATUS AND ELECTRONIC INFORMATION BROWSING PROGRAM RECORDING MEDIUM" in Japanese Unexamined Patent Publication No. 2000-172248 A laid open for public inspection on June 23, 2000, which corresponds to U.S. Serial No. 09/407,376 filed on September 28, 1999; "DOCUMENT DISPLAY APPARATUS AND METHOD FOR DISPLAYING DOCUMENTS" in Japanese Unexamined Patent Publication No. 2000-207269 A laid open for public inspection on July 28, 2000, which corresponds to U.S. Serial No. 09/473,049 filed on December 28, 1999; and "DOCUMENT BROWSING SYSTEM, AND DATA READ-IN APPARATUS AND DOCUMENT DISPLAY APPARATUS FOR USE IN DOCUMENT BROWSING SYSTEM" in Japanese Unexamined Patent Publication No 2001-60166 A laid open for public inspection on March 6, 2001. These publications disclose a technique enabling browsing successively linked information contents by traversing the linkage by smoothly moving a viewpoint, whereby a user can instantly understand the linkage between the contents during browsing.

Please REPLACE the paragraph beginning at page 4, line 23, with the following paragraph:

According to another aspect of the invention, a program for use in an information processing apparatus is provided for displaying a plurality of linked information objects in a virtual space in accordance with a visual field data. One of the plural information objects represents a content of a certain content type. The visual field data defines a visual field in the virtual space. The information processing apparatus includes a hold region which holds, in an

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executable condition, a program specific to the content type for causing an intermediate data generating step and a display image generating step to be executed. The intermediate data generating step is for generating intermediate data specific to the content type, and the display image generating step is for generating, from the generated intermediate data, a display image specific to the content type. The first program includes a step of generating an intermediate data for displaying the one information object by means of the intermediate data generating step, when it is determined, from the geometric relation between the visual field-field and the one information object, that the intermediate data for the one information object should be generated. The first program further includes a step of generating, from the generated intermediate data, a display image of the one information object by means of the display image generating step, when it is determined, from the geometric relation between the visual field and the one information object, that the one information object should be displayed.

Please REPLACE the paragraph beginning at page 7, line 19, with the following paragraph:

The visual field data managing means 102, the overall processing control means 104 103, the display picture generation managing means 105 and the memory managing means 110 may be implemented in the form of a processor or processors having programs for the respective means, or may be a processor or processors including the functions of the respective means in the form of integrated circuits.

Please REPLACE the paragraph beginning at page 8, line 26, with the following paragraph:

The input device 101 generates operation input data relating to display picture visual field movement and the like in response to the operation of the device 101 by a user, and supplies the input data to the visual field data managing means 102. The visual field data managing means 102 holds visual field data 60 and renews or updates it in accordance with the data inputted by the user.

The overall processing control means 103 controls overall processing done in the information processing apparatus 100, including operations of the visual field-field data managing means 102, the object data managing means 104 and the display picture generation managing means 105. The overall processing control means 103 controls operations of various

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sections of the information processing apparatus 100 so that processing for display can be done in real time.

Please REPLACE the paragraph beginning at page 9, line 4, with the following paragraph:

The object data managing means 104 performs ~~traverse- traversing~~ or search of links between the information objects, starting from a representative or base object, and then performs processing for preparation for information object display, whereby the link traverse and display preparation for information objects involved in display image generation can be processed efficiently.

Please REPLACE the paragraph beginning at page 9, line 27, with the following paragraph:

The display device 106 displays a picture generated by the display picture generation managing means 105. The display picture generation managing means 105 determines, from the geometric relation between the visual field 71 and information objects, whether or not a particular information object should be displayed on the display screen, and causes the object display image generator function 14 to execute real-time rendering of that information object on the display frame screen if that information object is determined to be displayed. In this manner, an information object to be displayed is properly selected for displaying in accordance with the shift of the visual field 71. The object display image generator function 14 can display information objects in different forms in accordance with display priority of the information objects and/or geometric relations between the visual field 71 and the information objects. This enables proper displaying of the information objects for the geometric relation between the visual field 71 and the information objects, whereby the amount of processing for low display priority information objects can be ~~limited- kept~~ low, and the information objects can be displayed in variable form depending on the geometric relations between the visual field 71 and the information objects.

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Please REPLACE the paragraph beginning at page 11, line 34, with the following paragraph:

Referring back to FIGURE 3, the display priority 34 is a variable for use in processing for information object display. The higher that priority, the more the information object display is desired. The value of the display priority is determined by by calculation mainly based on the data 33 representing the geometric relation of the information object to the visual field. Each time the geometric relation ~~representative~~ representative data 33 changes, the value is calculated anew and renewed. In general, an information object 73 in such a geometric relation as to be more easily seen has a higher priority value. The display priority 34 may be a single variable or separately prepared plural variables. As will be described later, the display priority is compared with a predetermined threshold value, for generation of object display intermediate data and display of an information object.

Please REPLACE the paragraph beginning at page 13, line 36, with the following paragraph:

The content data capturer function 11 captures content data for displaying an information object, through the information storage device 107, the network interface 108 or the cache data storage device 109 of the information processing apparatus 100 when such content data is required for displaying the object, and supplies it to the object displaying intermediate data generator function 12. The content data capturer function 11, when it has captured content data, may ~~stores~~ store the content data in the cache data storage device 109 for later re-use.

Please REPLACE the paragraph beginning at page 14, line 36, with the following paragraph:

The object display intermediate data 50 which is being generated or renewed by the object displaying intermediate data generator function 12, and also the intermediate data 50, part or ~~entire~~ all of which has been deleted by the object displaying intermediate data deleting device function 13, can be looked into asynchronously at any desired time by the object display image generator function 14 and can be used in real time display image generation. For that purpose, the object displaying intermediate data generator function 12 and the object displaying intermediate data deleting device function 13 generate and renew and delete the object display intermediate data 50, in such a manner and sequence as not to cause any contradiction when

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the object display image generator function 14 looks into the object display intermediate data 50 currently being processed and generates the subject display image.

Please REPLACE the paragraph beginning at page 17, line 35, with the following paragraph:

As the representative-object geometric relation 62 to the visual field changes, the geometric relations 33 of the respective information objects to the visual field also change, and the display priorities 34 change, which may cause the display priority 34 of some other information object to be higher than that of the representative object. If such case this happens, the information object having the higher display priority is selected as the representative object, and the representative object identification 61 in the visual field data 60 is rewritten. At the same time, the geometric relation to the visual field in the object display managing data 30 of the information object newly selected as the representative object is copied on the representative-object geometric relation data 62 in the visual field data 60, and stored. In this way, the representative object can be changed, while keeping the continuity of the visual field change. Thus, the linkage can be traversed infinitely in principle by shifting the visual field to display information objects without being limited by the scale ratio, by successively changing the representative object so that an information object whose geometric relation to the visual field can be defined with a standard scale is selected to be the representative object.

Please REPLACE the paragraph beginning at page 20, line 29, with the following paragraph:

At Step 207, the information processing apparatus 100 causes, through the object data managing means 104, the object display image deleting device function 13 to delete data when required. The object data managing means 104 ~~reduce-reduces~~ the data stored in the object data memory unit 113 when the amount of memory of the unit 113 occupied exceeds the predetermined threshold value. FIGURE 10 is an example of flow chart of the data reduction.

Please REPLACE the paragraph beginning at page 23, line 28, with the following paragraph:

At Step 432, the object data managing means 104 determines whether the display

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priority P_D 34 is lower than the threshold value P_{THDI} , which is the condition for deleting the object display intermediate data 50. If the priority P_D 34 is determined to be lower than the threshold P_{THDI} , the procedure advances to Step 433. If the priority P_D 34 is determined not to be lower than the threshold P_{THDI} , the procedure advances to Step 440. At Step 433, the object data managing means 104 causes the object display intermediate data deleting device function 13 to delete the object display intermediate data 50. If it is estimated that the deletion will not be completed in a short time, the deletion is done in a different thread.

Please REPLACE the paragraph beginning at page 25, line 20, with the following paragraph:

At Step 507, the processing in the loop is continued until the preparation of the display lists for all the object managing data is completed. ~~The~~ If the processing in the loop formed by the steps between Steps 503 and 507 inclusive is completed, the procedure advances to Step 508.

Please REPLACE the paragraph beginning at page 26, line 22, with the following paragraph:

The object display image generator function 14 may generates- generate a display image in varying forms in accordance with varying geometric relation representative data 33 or with varying values of the display priority P_D 34. For example, the transparency of the information object may vary depending on the display priority P_D 34. For example, an information object of lower display priority P_D 34 may be displayed with a higher transparency. In this case, as the visual field 71 becomes nearer to a remote information object, the display priority 34 of that object increases, so that the transparent information object gradually becomes more visible. In the object display intermediate data 50 having the format shown in FIGURE 5 for example, increase in processing time in display image generation can be avoided by employing an image with the minimum required resolution out of the basic or reduced images in the texture data 53 or transparent mapping data 54 in accordance with the data 33 representing the geometric relation of an information object to the visual field 71.

Please REPLACE the paragraph beginning at page 30, line 27, with the following paragraph:

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FIGURE 14 shows an example of linkage between information objects displayed according to the embodiment. A link 85 to an information object 82 is defined in an information object 81. A link 86 to an information object 83 is defined in the information object 82. A link 87 to an information object 84 is defined in the information object 83. The content data of these information objects 81-84 may be of any one of forms, such as a plain text, a text file, e.g. an HTML document or an XML document, a data file , e.g. a JPEG or MPEG data file, a data stream, a directory data, and program codes. The links 85-87 are ones defined by hyperlink data defined in the HTML or XML document, link data defined in the directory data, and other forms defined for other content types.

Please REPLACE the paragraph beginning at page 32, line 13, with the following paragraph:

FIGURE 15C shows the display screen 903 of a picture produced by bringing the view point 71 closer to the information objects objects 82 and 83 than that of the screen 902. As the visual field 71 moves, the information objects 82 and 83 are displayed larger than on the screen 902. In this picture, it is seen that the generation of the object display information data 50 for the information object 83 has not been completed yet, and the display image is generated from the object display intermediate data 50 in the middle of its generation.

Please REPLACE the paragraph beginning at page 32, line 29, with the following paragraph:

FIGURE 15E shows the display screen 905 of a picture produced some time after the screen 904, by moving the visual field 71 slightly rightward. The object display intermediate data 50 for the information object 83 has been further renewed, resulting in addition of images and change of the display image. The moving image 88 changes as time goes by.